

Appendix C

Mat Trouble Shooting Guide

Mat Troubleshooting Guide

Mat Tearing- Full Width of Mat **FOR ALL SCREEDS**

POSSIBLE CAUSE:

- 1) Excessive Speed
- 2) Unstable mix (temp., aggregate, etc.)
- 3) Screed lift not fully extended
- 4) Screed lift not released
- 5) Screed plate worn out
- 6) Cold Screed

- 7) Paving thinner than largest aggregate
- 8) Material too cold
- 9) Excessive moisture in mix
- 10) Strike-off too low

CURE:

- 1) Correct at machine
- 2) Correct at plant
- 3) Extend lift
- 4) Release lift
- 5) Replace
- 6) Check burners-review heating procedures
- 7) Correct at plant
- 8) Correct at plant
- 9) Correct at plant
- 10) Raise strike-off

FOR VIBRATORY SCREEDS:

POSSIBLE CAUSE:

- 11) Strike-off too low or in low position
- 12) Strike-off too high or in high position
- 13) Pre-strike off too low
- 14) Vibrator running too slow

CURE:

- 11) Adjust
- 12) Adjust
- 13) Adjust
- 14) Increase Vibration

Mat Tearing-Center (Before Rolling) **FOR ALL SCREEDS:**

POSSIBLE CAUSE:

- 1) Not enough lead crown
- 2) Flow gates closed down too far
- 3) Worn screed plate
- 4) Kick back on augers worn off
- 5) Segregation in mix

- 6) Cold screed

CURE:

- 1) Adjust as needed
- 2) Adjust gates
- 3) Replace screed plate
- 4) Replace or repair
- 5) Check hauling & Dumping procedure & plant operation
- 6) Check burners- review heating procedures

FOR TAMPER SCREEDS:

POSSIBLE CAUSE:

- 7) Tamper bars worn out
- 8) Tampers set too high or low

CURE:

- 7) Replace
- 8) Adjust correctly

FOR VIBRATORY SCREEDS:

POSSIBLE CAUSE:

- 9) Strike-off too low or in low position
- 10) Strike-off too high
- 11) Pre-strike off too low

CURE:

- 9) Adjust
- 10) Adjust
- 11) Adjust

Mat Tearing- Quarter Points

FOR ALL SCREEDS:

POSSIBLE CAUSE:

- 1) Cold Screed
- 2) Overloaded Augers
- 3) Cold material
- 4) Aggregate thicker than mat
- 5) Extensions incorrectly installed
- 6) Auger worn out

Cure:

- 1) Check burners-review heating procedures
- 2) Machine adjustment
 - a. Auger speed
 - b. Flow gates
- 3) Correct at plant
- 4) Check mat depth or correct at plant
- 5) See machine operator's manual
- 6) Replace augers

FOR TAMPER SCREEDS:

POSSIBLE CAUSE:

- 7) Tamper bars worn out
- 8) Tampers set too high or low

CURE:

- 7) Replace
- 8) Adjust correctly

MAT TEARING- EDGES

FOR ALL SCREEDS:

POSSIBLE CAUSE:

- 1) End plate not square

CURE:

- 1) Adjust as needed

- 2) Cold material build-up at end of augers
- 3) Extensions installed incorrectly
- 4) Flow gates closed down too far

- 2) Extend augers
- 3) Reinstall extensions
- 4) Adjust gates

FOR TAMPER SCREEDS:

POSSIBLE CAUSE:

- 5) Tamper bars worn out
- 6) Tampers set too high or low

CURE:

- 5) Replace
- 6) Adjust correctly

FOR VIBRATORY SCREEDS:

POSSIBLE CAUSE:

- 7) Pre-strike off too low

CURE:

- 7) Adjust

Material Tearing- Outside (Before Rolling)

FOR ALL SCREEDS:

POSSIBLE CAUSE:

- 1) Too much lead crown
- 2) Cold screed
- 3) Flow gates open too high
- 4) Paving thinner than largest aggregate
- 5) Extensions installed incorrectly
- 6) Cold material building up at end of augers

CURE:

- 1) Adjust
- 2) Check burner- review heating procedures
- 3) Adjust gates
- 4) Check mat depth or correct at plant
- 5) Reinstall extensions
- 6) Extend augers

FOR TAMPER SCREEDS:

POSSIBLE CAUSE:

- 7) Tampers bars worn out
- 8) Tampers set too high or low

CURE:

- 7) Replace
- 8) Adjust correctly

FOR VIBRATORY SCREEDS:

POSSIBLE CAUSE:

- 9) Strike-off too low or in low position
- 10) Strike-off too high or in high position
- 11) Pre-strike off too low

CURE:

- 9) Adjust
 - 10) Adjust
 - 11) Adjust
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Mat Tearing- Behind Main Screed with Extensions Retracted

PAVERS WITH POWER SCREED EXTENSIONS:

POSSIBLE CAUSE:

- 1) Extensions too low in front of main screed

CURE:

- 1) Adjust up
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Loose Streak in Center of Mat

FOR ALL SCREEDS:

POSSIBLE CAUSE:

- 1) Insufficient lead crown
- 2) Worn augers or kickback paddles
- 3) Flow gates too low
- 4) Augers worn out

CURE:

- 1) Adjust as needed
 - 2) Repair or replace
 - 3) Adjust as needed
 - 4) Replace augers
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Screed Rises at Each Take Off

FOR ALL SCREEDS:

POSSIBLE CAUSE:

- 1) Overloaded augers
- 2) Augers worn out
- 3) Waiting too long between loads
- 4) Varying mix temperatures
- 5) Grade sensor mounted at tow point

CURE:

- 1) Train operator
- 2) Repair or replace augers
- 3) Inform operator to adjust paver speed
- 4) Inform plant and truck drivers
- 5) Move back on side arm

VIBRATORY SCREEDS:

POSSIBLE CAUSE:

- 6) Strike off too high or in high position

CURE:

- 6) Adjust
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Screed Marks:

FOR ALL SCREEDS:

POSSIBLE CAUSE:

- 1) Trucks bumping paver
- 2) Waiting too long between loads
- 3) Screed lift not fully extended
- 4) Screed lift not released
- 5) Fluctuating head of material
- 6) Cold screed

CURE:

- 1) Train drivers
- 2) Inform operator to adjust paver speed
- 3) Extend lift
- 4) Release lift
- 5) Check paddle box locations, flow gate openings & speed of augers & conveyors
- 6) Review/check screed heaters & heating procedures.

FOR VIBRATORY SCREEDS:

POSSIBLE CAUSE:

- 7) Strike-off too low or in low position
- 8) Pre-strike off too low

CURE:

- 7) Adjust
 - 8) Adjust
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Poor Surface Texture

FOR ALL SCREEDS:

POSSIBLE CAUSE:

- 1) Fluctuating head of material
- 2) Augers overloaded
- 3) Extensions installed incorrectly
- 4) Trucks holding brakes
- 5) Cold material
- 6) Excessive moisture in mix
- 7) Excessive speed
- 8) Temperature of mix varying
- 9) Worn screed plate
- 10) Worn augers

CURE:

- 1) Check paddle box locations, flow gate openings, & speed of augers & conveyors
- 2) Review operational procedures
- 3) Reinstall extensions
- 4) Train drivers
- 5) Correct at plant
- 6) Correct at plant
- 7) Review correct procedures
- 8) Correct at plant
- 9) Replace screed plate
- 10) Repair or replace augers

FOR TAMPER SCREEDS:

POSSIBLE CAUSE:

- 11) Tamper bars worn out

CURE:

- 11) Replace

FOR VIBRATORY SCREEDS:

POSSIBLE CAUSE:

- 12) Strike-off too low or in low position
- 13) Strike-off too high or in high position
- 14) Pre-strike off too low
- 15) Vibrator running too slow

CURE:

- 12) Adjust
- 13) Adjust
- 14) Adjust
- 15) Increase vibration at vibrator control and/or reposition & coordinate eccentric weights

Fluctuating Mat Texture

FOR ALL SCREEDS:

POSSIBLE CAUSE:

- 1) Fluctuating head of material
- 2) Augers overloaded
- 3) Waiting too long between loads
- 4) Paving thinner than largest aggregate
- 5) Extensions installed incorrectly
- 6) Worn screed plate
- 7) Running hopper empty between loads
- 8) Trucks holding brakes
- 9) Worn augers
- 10) Cold screed
- 11) Cold material
- 12) Segregation in mix

CURE:

- 1) Check paddle box locations, flow gate openings & speed of augers & conveyors
- 2) Review operational procedures
- 3) Inform operator to adjust paver speed
- 4) Check mat depth or correct at plant
- 5) Reinstall extensions
- 6) Replace screed plate
- 7) Train operator & adjust paver speed
- 8) Train drivers
- 9) Repair or replace
- 10) Review/check screed heaters & heating procedures
- 11) Correct at plant
- 12) Check hauling & dumping procedure & plant operation

FOR TAMPER SCREEDS:

POSSIBLE CAUSE:

- 13) Tamper bars worn out
- 14) Tampers not running at full RPM
- 15) Tampers not timed
- 16) Tampers set too high or low
- 17) Material hardened around tamper bars

CURE:

- 13) Replace
- 14) Increase tamper speed
- 15) Correct
- 16) Adjust correctly
- 17) Clean tamper bars

FOR VIBRATORY SCREEDS:

POSSIBLE CAUSE:

- 18) Strike-off too low or in low position
- 19) Strike-off too high or in high position
- 20) Pre-strike off too low

CURE:

- 18) Adjust
 - 19) Adjust
 - 20) Adjust
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Transition Lines Between Screed & Extensions

FOR ALL SCREEDS:

POSSIBLE CAUSE:

- 1) Extensions set too high or low

CURE:

- 1) Adjust height of extensions
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Voids In Extension Area

FOR ALL SCREEDS:

POSSIBLE CAUSE:

- 1) Extension starved for material

CURE:

- 1) Install additional augers & guards for constant extended width- Use kick-out paddles for variable extended widths
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Bright Streak Down Center of Mat

FOR ALL SCREEDS:

POSSIBLE CAUSE:

- 1) Too much lead crown
- 2) Flow gates too high
- 3) Augers worn out

CURE:

- 1) Make necessary adjustment
- 2) Adjust as needed
- 3) Repair or replace

Auger Shadows

FOR ALL SCREEDS:

POSSIBLE CAUSE:

- 1) Overloaded augers
- 2) Flow gates too high
- 3) Worn augers
- 4) Segregation in mix

CURE:

- 1) Review operational procedures
 - 2) Adjust as needed
 - 3) Repair or replace augers
 - 4) Check hauling & dumping procedure & plant operation
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Ripples

FOR ALL SCREEDS:

POSSIBLE CAUSE:

- 1) Fluctuating head of material
- 2) Augers overloaded
- 3) Electronic control hunting
- 4) Flow gates open too high
- 5) Speed in excess
- 6) Loose or worn depth crank assembly
- 7) Roller in poor mechanical condition
- 8) Worn augers
- 9) Unstable mix
- 10) Too much lead crown
- 11) Not enough lead crown
- 12) Trucks holding brakes
- 13) Screed lift not fully extended
- 14) Screed lift not released
- 15) Temperature of mix varying

CURE:

- 1) Check machine adjustments
check material for inconsistency
- 2) Review operational procedures
- 3) Check electronic controls
- 4) Adjust as needed
- 5) Adjust paver speeds
- 6) Repair, tighten or replace
- 7) Repair or replace roller
- 8) Repair or replace
- 9) Correct at plant
- 10) Adjust screed
- 11) Adjust screed
- 12) Train drivers
- 13) Extend lift
- 14) Release lift
- 15) Correct at plant

FOR TAMPER SCREEDS:

POSSIBLE CAUSE:

- 16) Tamper bars worn out
- 17) Tampers not running at full RPM
- 18) Tampers not timed
- 19) Material hardened around tamper bars

CURE:

- 16) Replace
- 17) Increase tamper speed
- 18) Correct
- 19) Clean tamper bars

FOR VIBRATORY SCREEDS:

POSSIBLE CAUSE:

- 20) Strike-off too low or in low position
- 21) Strike-off too high or in high position
- 22) Pre-strike off too low

CURE:

- 20) Adjust
 - 21) Adjust
 - 22) Adjust
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Wavy Surface- Long

FOR ALL SCREEDS:

POSSIBLE CAUSE:

- 1) Running hopper empty between loads
- 2) Fluctuating head of material
- 3) Augers overloaded
- 4) Temperature of mix varying
- 5) Screed lift not fully
- 6) Screed lift not released
- 7) Over-correction of depth cranks
- 8) Worn augers
- 9) Flow gates closed down too far
- 10) Segregation in mix
- 11) Waiting too long between loads

CURE:

- 1) Train operator & adjust paver speed
 - 2) Check machine adjustments, check material for inconsistency
 - 3) Review operational procedures
 - 4) Correct at plant
 - 5) Extend lift
 - 6) Release lift
 - 7) Review correct procedures
 - 8) Repair or replace
 - 9) Adjust gates
 - 10) Check hauling & dumping procedure & plant operation
 - 11) Inform operator to adjust paver speeds
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Wavy Surface- Short

FOR ALL SCREEDS:

POSSIBLE CAUSE:

- 1) Electronic control hunting
- 2) Fluctuating head of material
- 3) Augers overloaded
- 4) Temperature of mix varying
- 5) Flow gates closed down too far
- 6) Unstable mix
- 7) Trucks holding brakes
- 8) Loose or worn depth crank assembly

CURE:

- 1) Check electronic controls
- 2) Check machine adjustments, check material for inconsistency
- 3) Review operational procedures
- 4) Correct at plant
- 5) Adjust gates
- 6) Correct at plant
- 7) Train drivers
- 8) Repair, tighten, or replace

CON'T:

POSSIBLE CAUSE:

- 9) Worn augers
- 10) Segregation in mix
- 11) Roller in poor mechanical condition

CURE:

- 9) Repair or replace
 - 10) Check hauling & dumping procedure & plant operation
 - 11) Repair or replace roller
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Hair Line Cracks

FOR ALL SCREEDS:

POSSIBLE CAUSE:

- 1) Poor rolling procedures
- 2) Augers overloaded
- 3) Excessive moisture in mix
- 4) Fluctuating head of material
- 5) Excessive speed
- 6) Unstable mix

CURE:

- 1) Check roller manufacturer recommendations
- 2) Review operational procedures
- 3) Correct at plant
- 4) Review correct procedures
- 5) Review correct procedures
- 6) Correct at plant

FOR TAMPER SCREEDS:

POSSIBLE CAUSE:

- 7) Tamper bars worn out
- 8) Tampers not running at full RPM
- 9) Tampers not timed
- 10) Material hardened around tamper bars

CURE:

- 7) Replace
- 8) Increase tamper speed
- 9) Correct
- 10) Clean tamper bars

FOR VIBRATORY SCREEDS:

POSSIBLE CAUSE:

- 11) Strike-off too low or in low position
- 12) Strike-off too high or in high position
- 13) Pre-strike off too low

CURE:

- 11) Adjust
 - 12) Adjust
 - 13) Adjust
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Poor Longitudinal Joints

FOR ALL SCREEDS:

POSSIBLE CAUSE:

- 1) Delay in rolling
- 2) Over-correction of depth cranks
- 3) Overloaded augers
- 4) End plate not square
- 5) Head of material varying
- 6) Overlapping joint too much

CURE:

- 1) Improve coordination
 - 2) Review correct procedures
 - 3) Review correct procedures
 - 4) Adjust as needed
 - 5) Correct machine operation or adjustment
 - 6) Review correct procedures
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Poor Transverse Joints

FOR ALL SCREEDS:

POSSIBLE CAUSE:

- 1) Incorrect milling procedure
- 2) Over-correction of depth cranks
- 3) Poor rolling operation
- 4) Augers overloaded
- 5) Screed lift not fully extended
- 6) Screed lift not released
- 7) Varying mix temperature
- 8) Cold Screed
- 9) Not rolling joint soon enough
- 10) Material too cold
- 11) Incorrect joint preparation
- 12) Fluctuating head of material

CURE:

- 1) See machine manual for recommended procedure
 - 2) Review correct procedures
 - 3) Review correct procedures
 - 4) Review correct procedures
 - 5) Extend lift
 - 6) Release lift
 - 7) Correct at plant
 - 8) Check screed heaters & review heating procedures
 - 9) Review correct procedures
 - 10) Correct at plant
 - 11) Review recommended procedures
 - 12) Check machine adjustments check for inconsistencies in material
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Bleeding

FOR ALL SCREEDS:

POSSIBLE CAUSE:

- 1) Excessive moisture in mix
- 2) Poor rolling operation
- 3) Excessive tack coat

CURE:

- 1) Correct at plant
- 2) Review correct procedures
- 3) Correct tack application

FOR TAMPER SCREEDS:

POSSIBLE CAUSE:

- 4) Tampers too low

CURE:

- 4) Adjust tampers

FOR VIBRATORY SCREEDS:

POSSIBLE CAUSE:

- 5) Vibrator running too fast
- 6) Eccentric weights set incorrectly
- 7) Strike-off too low or in low position
- 8) Strike-off too high or in high position
- 9) Pre-strike off too low

CURE:

- 5) Reduce vibration
 - 6) Reset
 - 7) Adjust
 - 8) Adjust
 - 9) Adjust
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Screed Rides Nose Down

FOR ALL SCREEDS:

POSSIBLE CAUSE:

- 1) Screed depth crank improperly set
- 2) Screed depth crank bearings badly worn
- 3) Forward area of screed plate badly worn

CURE:

- 1) Adjust for correct angle of attack
- 2) Replace bearings
- 3) Replace screed plate

FOR VIBRATORY SCREEDS:

POSSIBLE CAUSE:

- 4) Strike-off too high or in high position
- 5) Pre-strike off set too high

CURE:

- 4) Adjust
 - 5) Make adjustment as outlined in machine operators manual
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Unable to Control Screed

FOR ALL SCREEDS:

POSSIBLE CAUSE:

- 1) Screed lift not fully extended
- 2) Screed lift not released
- 3) Cold screed
- 4) Paving thinner than largest aggregate
- 5) Unstable mix
- 6) Loose or worn depth crank assembly

CURE:

- 1) Extend lift
- 2) Release lift
- 3) Check screed heaters & review heating procedures
- 4) Check mat depth or correct at plant
- 5) Correct at plant
- 6) Repair, tighten or replace

FOR VIBRATORY SCREEDS:

POSSIBLE CAUSE:

- 7) Strike off too high or in high position
- 8) Pre-strike off set too high

CURE:

- 7) Adjust
 - 8) Make adjustment as outlined in machine operators manual
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Pushing Under Roller

FOR ALL SCREEDS:

POSSIBLE CAUSE:

- 1) Poor roller operation
- 2) Unstable mix

CURE:

- 1) Review rolling procedures
- 2) Correct at plant

FOR TAMPER SCREEDS:

POSSIBLE CAUSE:

- 3) Tampers not running at full RPM
- 4) Tampers not timed
- 5) Material hardened around tamper bars

CURE:

- 3) Increase tamper speed
- 4) Correct
- 5) Clean tamper bars

FOR VIBRATORY SCREEDS:

POSSIBLE CAUSE:

- 6) Pre-strike off too low

CURE:

- 6) Adjust
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Unsatisfactory Compaction

FOR ALL SCREEDS:

POSSIBLE CAUSE:

- 1) Poor roller operation

CURE:

- 1) Review rolling procedures

FOR VIBRATORY SCREEDS:

POSSIBLE CAUSE:

- 2) Vibrator running too slow
- 3) Eccentric weights set incorrectly

CURE:

- 2) Increase vibration
- 3) Adjust